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What factors are truly associated with risk for radicalisation? A secondary data analysis within a UK sample.

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Abstract

Background: Radicalisation and extremist violence is of increasing concern internationally. The unconventional, decentralised, and transnational nature of modern terrorists is thought to involve an active process of radicalisation, leaving the traditional national security responses largely incomplete and in need of more empirical research. This study aims to identify factors that relate to extremist attitudes and potential signs of vulnerability to radicalisation, in order to inform preventative action.

Method: A cross-sectional survey of a representative population sample of men and women aged 18–45, of Muslim heritage were recruited by quota sampling in two English cities. Logistic regressions were performed on a dichotomised 7-item scale of ‘sympathy for terrorist acts’ scale where all scores representing ‘non-condemnation of these acts’ were deemed to represent risk for radicalisation.

Results: Thirteen respondents had a positive score on the terrorism sympathy measure (2.4%), 39 scored zero (6.41%) and the remainder (91.4%) had a negative score representing condemnation of terrorist acts. There was a significant association between terrorism sympathy and expression of belonging to the local or global Muslim community, anxiety, and sympathy for defensive violence. Gender and all variables relating to religious practice were not significant.

Conclusions: Religion, country of birth, belief in Sharia law, the importance of religion and mosque attendance were all not associated with sympathy for terrorism.

Expressed belonging to the local and global Muslim community, anxiety, and sympathy for the use of defensive violence are associated with sympathies for terrorism, which we interpret as vulnerability to radicalisation. The results contribute new theoretical developments to the field, and potential application to develop preventative public health interventions.

Introduction

The Global Terrorism Database defines terrorism as the “threatened or actual use of illegal force directed against civilian targets by non-state actors in order to attain a political goal through fear, coercion, or intimidation” (Koomen & Van Der Pligt, 2015). These attacks can predominantly be divided into five categories described by the affiliations of the perpetrators: left-wing (or social revolutionary), right wing, nationalist/separatist, religious and single-issue (e.g. animal rights) (Koomen & Van Der Pligt, 2015). Recently, the threat to Western societies from terrorism has shifted from organised foreign groups such as Al-Qaeda, the Taliban, and Al-Shabaab, to a new breed of ‘home-grown’ and ‘lone-actor’ terrorists, who operate in the name of terrorist groups, yet have limited or no direct contact with the group leading up to their attack.

This unconventional, decentralised, and transnational nature of modern terrorists has left traditional national security responses incomplete and lacking evidence of effectiveness to tackle these new forms of terrorism, perpetrated by radicalised youth. Some argue we need more empirical evidence and hence the call on epidemiologists and other scientists to better understand radicalisation and vulnerability to persuasion to join terrorist causes through the identification of true risk factors, and therefore the development of evidence-based preventative policy and procedural changes (Desmarais, Simons-Rudolph, Brugh, Schilling, & Hoggan, 2017; Stares & Yacoubian, 2007).

The aim of this study is to identify factors that relate to terrorism sympathy to inform future preventative interventions. This will be achieved through a) identification of univariate associations between terrorism sympathy and implicated variables; and b) assess these as independent associations in a multivariate model consisting of all significant univariate predictors, so adjusting for confounders and assessing potential interactions.

Literature. The majority of known terrorists are men in their early-to-mid-twenties (K. Bhui, Warfa, & Jones, 2014; Desmarais et al., 2017; Fair & Shepherd, 2006; Koomen & Van Der Pligt, 2015; LaFree & Ackerman, 2009; Schbley, 2003; Silber, 2008; Victoroff, Adelman, & Matthews, 2012). Reflective of this we hypothesized that younger age (H1) and male gender (H2) will be associated with greater chance of expressing terrorism sympathy.

Human capital is heavily considered by terrorist groups recruiting individuals to conduct high-stakes attacks, and as such convicted terrorist and perpetrators of attacks and those identified to hold sympathies for terrorism are typically healthy, with no mental health complaints, well-educated, intelligent and physically fit (Benmelech & Berrebi, 2007; K. Bhui, James, & Wessely, 2016; Counter Extremism Project, 2017; Desmarais et al., 2017; Post, 2015; Schbley, 2003; Silber, 2008). This contrasts with the findings of lone actor terrorists. Lone actors have been shown to be 13.49 times more likely to have a mental illness than group actors (Corner & Gill, 2015; Mccauley, Moskalenko, & Son, 2013). Therefore, we hypothesized there will be no impact of physical health (H3), however depression (H4) and anxiety (H5) will be associated with greater sympathy, due to their role in increasing impulsivity. We argue that education status will be a risk factor, with higher education related to greater sympathy for terrorism (H6) given that political protest movements and thus actions to combat radicalisation often focus on universities and schools as relevant venues.

Threats and discrimination, especially if patterned along ethnic or religious lines, cause people to feel the need to protect ones' community, and perhaps avenge attacks on the group, be they political, economic or conflict related; these are often cited as motivations in analyses of Islamic based terrorism, nationalist/ separatist Irish terrorism, and lone-actor attacks (Alderdice, 2007; Hickman, Thomas, Silvestri, & Nickels, 2011; Mccauley et al., 2013; Paradies, 2006; Rogers et al., 2007; Schbley, 2003; Victoroff et al., 2010). In addition, Webber et al. (2018) uncovered through a series of studies that extremism was increased by feelings of insignificance which can be caused through discrimination, and humiliation of the individual's identity and group. A secondary benefit to this study is it compared the effect of this construct on both convicted extremists, and a US sample and found that the effect of feelings of insignificance and terrorism outcomes were consistent between both groups. Unlike many studies cited here, and the present study, which investigate either a general population sample or convicted extremists, Webber et al. (2018) validated their results across both populations. On the strength of this evidence, we hypothesized that increased perceived discrimination will be associated with increased terrorism sympathy (H7).

A key predisposing factor to radicalisation was the lack of identification with mainstream society, which acts independently, over and above the effects of foreign nationality (McGilloway, Ghosh, & Bhui, 2015; Zhirkov, Verkuyten, & Weesie, 2014). Gill, Horgan, and Deckert (2014) identified that over half of their sample of lone-actor terrorists were

socially isolated. Obstructively, joining terrorist networks has been shown to provide a sense of social belonging and autonomy (Alderdice, 2007; Crone & Harrow, 2010; LaFree & Ackerman, 2009; Neumann, 2016). As such we hypothesize that any strong sense of group belonging will prove protective against radicalisation and so will result in a decreased terrorism sympathy (H8). Equally, increased social capital that involves feelings of belonging, trust, and feeling safe, will relate to lower terrorism sympathy (H9).

The cultural and racial heritage of terrorists is varied (Krueger, 2008; Silber, 2008). However, a connection to a foreign country where terrorist groups are active is frequently observed, and with increasing globalisation further opportunities arise for any disenfranchised individual to find and identify with radical groups (Zimmermann, 2011). Although religion is the predominant narrative being used in attacks against the West, previous analyses of the same UK population assessed here, found that lower regard for religion was associated with greater risk for radicalisation (K. Bhui, Everitt, & Jones, 2014). Similarly it has been demonstrated that a greater understanding of the true principles of Islam was predictive of a low level of support for militant groups Desmarais et al. (2017); (Fair, Goldstein, & Hamza, 2017), while a literature review of factors associated with terrorism could not find any statistical support for the link between Islamic faith and terrorism outcomes (Desmarais et al., 2017).

The importance of religion (H10), mosque attendance (H11), respect for British law (H12) and respect for Sharia law (H13) were hypothesized to be associated with lower levels of sympathy for terrorism.

Additionally, of individuals convicted of terrorist offences in the US 11% or more converted to Islam while in prison (Counter Extremism Project, 2017). Therefore, it is far more probable that religious rhetoric and the terrorism framework are used as an excuse to carry out violent acts in protest with disenfranchisement (McGilloway et al., 2015; Rogers et al., 2007). Equally a high level of rationalization of violent action has previously been associated with support for acts of terrorism (Putra & Sukabdi, 2014). In support of this, previous criminal convictions and a history of violence was observed in 21% of all convicted terrorists (Counter Extremism Project, 2017) and 41% of lone actor terrorists (Gill et al., 2014). The final hypothesis is that sympathy to defensive or protective violence (justification

for violence based on defending one's group and tackling injustice) is hypothesized to be associated with an increase in terrorism sympathy (H14).

Method

Survey Population

The 2001 UK census was used to set sampling units reflective of the key demographic variables of the true population, and the expected number of Muslim households in each output area. Proportional quota sampling was utilised in the regions of Bradford and East London to ensure the sampling quotas for age, gender, work status, and ethnicity were met.

The final study population included 608 Bangladeshi and Pakistani men and women living in East London and Bradford. Respondents ages ranged from 18-45 and all were of Muslim heritage. Participants were asked their age, gender, ethnicity, country of birth, and education level. Sensitive questions about religion were developed with a community panel of researchers and members of the public. Respect for British law and Sharia law were each evaluated with a single item which simply stated "How much respect, if any, would you say you have for (British/ Sharia) law". Responses were taken on the same 4-item scale used to evaluate religious variables and sense of belonging with 1 representing a great deal and 4 none at all. Four single items were used to assess sense of belonging. Importance of religion and mosque attendance were each addressed using single-item measures. Participants were also asked "How important, if at all, is your religion to the way you live your life?" with responses on a 4-point scale with 1 representing fairly important and 4 representing not at all important. Questions developed in the EMPIRIC study assessing physical assault, damage to property, verbal abuse, unfair treatment at work or dismissal, due to race, religion of culture was used to assess discrimination (K. Bhui et al., 2005). Social support and social networks were assessed by asking the number of interactions in person or by telephone, with relatives, friends, or neighbours that respondent had in the past two weeks. The composite score for social contacts was calculated as the sum of these interactions.

To assess physical health four items previously used for a survey of serving and ex-serving members of the UK Armed forces and adapted from the SF12 were used (Hotopf et al., 2006). The GAD-7 is a highly utilised measure of generalised anxiety disorder in accordance with the diagnostic criteria set by the DSM-V. Responses are measured on a 4-point scale

ranging from 1- *not at all* to 4- *nearly every day*. Internal consistency for the scale has previously been shown to be excellent $\alpha=0.93$ (Mills et al., 2014). PHQ-9 is a very well established and utilised measure of depressive symptoms based off the DSM-V criteria. It is a 9-item measure with responses recorded on a 4-point likert scale from 1- *not at all* to 4- *nearly every day*. The PHQ-9 has been shown to have good internal consistency $\alpha=0.89$ (Kroenke, Spitzer, & Williams, 2001). For both the GAD-7 and HQ-9 if a participant was missing responses on 1 or 2 items the average of the remaining items was used as their overall score, if 3 or more responses were missing the overall response was coded as missing.

Following the piloting phase of the SyfoR scale full psychometric properties and factor structure of the scale were tested and reported in K. Bhui, Warfa, et al. (2014). All questions in the scale were answered on a 7-point Likert scale with response options ranging from 1 (I condemn completely) to 7 (I sympathise completely). Respondents were also given the option to respond “Don’t know” or interviewers could code “Refused/ prefer not to answer” due to the sensitive nature of the questions. A factor analysis of the scale revealed 4 separate factors which fit the headings radicalisation (sympathies for the 7 most serious terrorist related acts), defensive violence (demonstrating willingness to use violent to protest against injustice or sense of threat), British citizens fighting the UK, and foreign policy (K. Bhui, Warfa, et al., 2014). In published studies (K. Bhui, Everitt, et al., 2014; K. Bhui, Silva, Topciu, & Jones, 2016; K. Bhui, Warfa, et al., 2014) the 11-items which mapped onto the two factors of radicalisation and defensive violence were used as the final SyfoR scale. This scale had good internal consistency $\alpha=0.91$ and can be seen in Kamaldeep Bhui et al. (2019).

As discussed previously, while the scale was reported as having high face validity, and assumed a continuum of sympathies for terrorist and defensive violence, the inclusion of defensive violence questions such as “the use of violence to protect your family” and “The use of violence to fight police injustice” did not appear to fit with the a tighter concept of sympathies of terrorist acts, captured by the first factor.

Therefore, for the proposed analyses in this paper, only the 7-items included in the factor “Radicalisation” were used in a new measure; Sympathy for Violent Protest and Terrorism (SVPT). These items included “threaten to commit terrorist actions as a form of political protest”, “organise radical terrorist groups but do not personally participate in protest or

violence”, “Commit terrorist actions as a form of political protest”, “the use of bombs to fight against injustice”, and “the use of suicide bombs to fight against injustice”. This 7-item scale had good internal consistency $\alpha=0.86$. The composite score was created following the PHQ-9 and GAD-7 guidelines whereby mean final scores were generated from the items with no more than 2 missing scores per participant.

The items that fitted the ‘defensive violence’ factor were used to assess predisposition to violence. These questions were answered on a 7-point Likert scale with response options ranging from 1 (I condemn completely) to 7 (I sympathise completely).

Sensitivity analyses

Of the 48 items that were assessed 40 had significant skew and 46 had significant kurtosis. Transformations were performed in line with the conventions set by Tabachnick and Fidell (2007). Not all items were able to have their skew and/or kurtosis brought to non-significance, however all were improved substantially. Missing value analyses, adjustment and the final analyses were performed with and without skew adjusted for.

Intercorrelations. The outcome measure correlated significantly with belonging to the local and global Muslim community, anxiety and sympathy for violence. There were significant correlations between all the variables with religious implications. Depression and anxiety were positively correlated, and both negatively correlated with general health. Overall, all intercorrelations could be anticipated, which suggests that all variables are performing as would be expected, thus have good convergent validity.

Missing data analysis. Adjustment for skew and kurtosis made no significant difference to the overall summary of missing values, the variable summary, missing data patterns, separate variance t-tests, and Little’s test therefore the following section will report only the results from the skew not adjusted and univariate outliers remaining dataset.

23 of the 29 variables tested had at least one case of missing data and 3 had more than 5%. Specifically, sympathy to violence was missing 10.4% of responses, respect for Sharia law was missing 10.2% of responses and terrorism sympathy was missing 6.9% of responses. The missing value patterns approximated normal. The Little’s MCAR test was significant [χ^2

(1273, $N = 608$) = 1569.84, $p < .001$] and therefore absent data were not missing completely at random. To evaluate the missing nature of the data separate variance t-tests were consulted. For all three variables with significant missing data there was a significant difference between missing and non-missing on several other variables. However, while there does appear to be some form of relationship between non-response and key variables the directions were consistent and therefore we can assume that the data is not “Missing Not at Random” (MNAR).

Adjustment for missing data. Multiple imputation by chained equations (MICE) was applied to replace missing data. The random seed was generated using the Mersenne Twister pseudorandom number generator with a fixed starting point of 2,000,000. All variables with missing data points were included in the model which underwent 5 imputations. The Markov Chain Monte Carlo (MCMC) method was applied with a linear model as there was not a defined pattern to the missing data.

Results

Frequency of terrorism sympathy

Thirteen respondents had a positive score on the terrorism sympathy measure (2.4%), 39 scored zero (6.41%) and the remainder (91.4%) had a negative score representing condemnation of terrorist acts.

Univariate analyses

The constant only model was able to predict 97.8% of the participant outcomes ($\beta = -3.69$, $p < .01$). The univariate logistic regression results for each variable entered separately at block 1 are presented in table 1, and outlined below.

Variable	OR	95% confidence interval	P-value
Sex	.996	.154-6.443	.996
Age	.944	.827-1.078	.329
Ethnicity	.370	.57-2.395	.295
Place of birth	.894	.326-2.450	.827
Education	1.786	.914-3.489	.087
Years lived in the area	.962	.516-1.791	.902
Same clothes as own ethnic group	.465	.168-1.287	.137

Same clothes as different ethnic groups	1.429	.567-3.603	.447
Belonging to Britain	.791	.167-3.746	.767
Belonging to local area	1.346	.379-4.778	.645
Belonging to global Muslim community	3.912	1.406-10.88	.009
Belonging to local Muslim community	2.878	1.047-7.913	.041
Respect for British law	1.724	.425-6.988	.445
Respect for Sharia law	.600	.097-3.705	.575
Mosque attendance	.839	.580-1.214	.350
Importance of religion	<.001	.000-348.283	.992
Social capital	.690	.444-1.070	.097
General health	1.282	.451-3.646	.640
Depression	2.362	.879-6.348	.088
Anxiety	2.337	.992-5.504	.052
Sympathy to defensive violence	2.899	1.270-6.615	.013
Perceived discrimination	0.240	.005-10.881	.463

Table 1: Univariate logistic regression results for association and magnitude of association between predictors and terrorism sympathy.

There was no significant association between terrorism sympathy and gender, age, ethnicity, place of birth, years lived in the area, belonging to Britain, belonging to local area, respect for British law, respect for sharia law, mosque attendance, importance of religion, general health or perceived discrimination.

There was a significant association between belonging to the global Muslim community and terrorism sympathy. The significant odds ratio demonstrates that a one unit increase in sense of belonging to the global Muslim community relates to being 3.9 times more likely to sympathise with terrorism. There was a significant association between belonging to the local Muslim community and terrorism sympathy terrorism. The significant odds ratio demonstrates that a one unit increase in belonging to the local Muslim community relates to being 2.9 times more likely to sympathise with terrorism.

There was a significant association of sympathy for defensive violence and terrorism sympathy. The significant odds ratio demonstrates that a one unit increase in sympathy to violence relates to being 2.9 times more likely to sympathise with terrorism.

Multivariate analyses

The four variables entered in the model at step 1 were shown to have significant associations, see table 2. At step 1 the model had significant explanatory power (overall X^2 [df=4, $N = 608$] = 23.745, $p < .01$).

	P-value
Belonging to global Muslim community	.002
Belonging to local Muslim community	.029
Anxiety	.035
Sympathy to defensive violence	.001

Table 2: Predictive ability of each variable within the total model.

The Hosmer and Lemeshow goodness of fit for logistic regression test was not significant ($p=.968$) indicating no evidence of a poor model fit. Nagalkerke's pseudo R^2 was 0.478, demonstrating that 48% of the total variance could be explained by the model. The individual relationships for each variable is shown in table 3, however none of these were significant demonstrating that the relationships between each of these variables and terrorism sympathy is not significant over and above the effects of the other variables.

	OR	95% confidence interval	P-value
Belonging to global Muslim community	7.622	.353-164.712	.182
Belonging to local Muslim community	.551	.067-4.526	.573
Anxiety	2.292	.641-8.200	.201
Sympathy to violence	3.510	.788-15.630	.093

Table 3: Associations between model variables and terrorism sympathy over and above the effects of each other.

Discussion

This study aimed to identify factors that create vulnerability to violent radicalisation in a UK sample, and thus inform future preventative interventions. The results of the secondary data analysis point to several predisposing and associated factors, as well as demonstrating the absence of an association between terrorism sympathy and a series of commonly associated factors. Overall, a very small proportion of this sample gave any support whatsoever to terrorism.

In relation to individual factors, the analysis found no association for age or gender. Similar to the findings here, K. Bhui, Warfa, et al. (2014) found no association for gender using the original outcome measure, while they did find an association for age. This is an interesting comparison, as it suggests that the effect of age in their findings may have been driven by the defensive violence items within the radicalisation measure rather than more specific

sympathies for terrorist acts. The results from this study would suggest that while young males may be the most common perpetrators of violent attacks the risk for radicalisation is equal between the genders, and across all age groups.

The results suggest a slight association between education level and terrorism sympathy, however, the odds ratio did not reach significance and the confidence intervals were very wide indicating a reliable quantification of this relationship was not possible. Such a finding would be in agreement with the previous analyses of this sample, which found that individuals still engaged with education held higher sympathy for terrorism and defensive violence (K. Bhui, Warfa, et al., 2014). A finding of this nature would be concerning, as it would allude to the probability that not only do terrorist groups prefer to recruit educated individuals (Benmelech & Berrebi, 2007; Counter Extremism Project, 2017), but that something within the higher education systems is leaving certain individuals predisposed to radicalisation. One potential theoretical explanation for this is the concept of relative deprivation, in which the greater the perceived difference between what an individual has, and what they feel they deserve based on their peers and surrounding communities, the greater the frustration regarding the inequalities, and greater the potential for violent protest (Zhirkov et al., 2014). Students from a Bangladeshi and Pakistani background studying in the UK potentially feel greater relative deprivation to their peers at university. In addition it is possible that the greater understanding of world politics and events which is encouraged within the university system may cause students be more acutely aware of global inequalities (Zhirkov et al., 2014), which when combined with other risk-factors may predispose specific students to radicalisation.

As hypothesized there was no effect of general health on terrorism sympathy. The association between depression and terrorism sympathy suggested a slight trend in support of hypothesis 4, however did not reach significance. Previous analyses for the same sample using cluster analyses had identified depression as a risk factor to sympathy for violence and terrorism over and above the effects of psychosocial adversity and discrimination; one explanation was the shared underlying maladaptive cognitive biases, and genetic neurochemical origins of violence and depression may explained this association (K. Bhui, Everitt, et al., 2014).

This conclusion is not necessarily rejected by the findings here, as in line with hypothesis 5, there is a significant association between anxiety and terrorism sympathy. The odds ratio

significance test falls short of the $p=0.05$ threshold, however, it would appear that individuals with anxiety are almost 3 times more likely to sympathise with terrorism. It is possible that the anxiety symptoms measured by the GAD-7, such as 'worrying too much', could reflect a sense of disenfranchisement, or concern for the future of one's children, friends and community. However, the null finding for perceived discrimination, which will be discussed further, contradicts that this may be the causal factor behind the relationship between anxiety and terrorism sympathy. Consequently, like the previous findings for depression, the association for anxiety is likely driven by the underlying biological and cognitive causes of these common mental disorders. A recent study using the 7-item SVPT measure in a different population confirmed the association between anxiety and sympathy for terrorism (Kamaldeep Bhui et al., 2019). However found a significant relationship with depression, and additional psychological disorders not tested here. Overall, evidence across multiple populations linking risk for radicalisation with mental illness consistently shows an effect, however the exact nature of the relationship remains unclear.

Perceived discrimination, social capital, belonging to the local area and belonging to Britain all did not present as significant risk factors. However, sense of belonging to local and global Muslim communities presented as a risk factor for terrorism sympathy. However, a relationship between place of birth and sympathy for terrorism was not observed, and therefore the sense of belonging to global Muslim communities which can cause sympathy for terrorism is not fostered physically but rather through social networks and the media.

While sense of belonging to Muslim communities was associated with a greater risk for terrorism sympathy, the importance of religion and mosque attendance had no association, as was predicted in hypotheses 11 and 12. This demonstrates that it is neither the religious nor Islamic elements of Muslim communities which may foster terrorism sympathy in those with a strong sense of belonging, but something else. Additionally, as relationships between sense of belonging to global and local muslim communities is not supported by any previous studies it should not be used to inform and policy or practice decisions, but rather needs to be explored further by research.

Like mosque attendance and religious importance, respect for Sharia law was also not associated with predisposition to radicalisation. Respect for British laws also showed no association with terrorism sympathy.

However, sympathy for violence was associated with terrorism sympathy, whereby for a one unit increase in sympathy for violence, individuals are almost 3 times more likely to sympathise with terrorism. This demonstrates further support for the clear relationship between violence and terrorism. Additionally, this study supports that it is not religious individuals, but violent individuals, who are predisposed to radicalisation.

The multivariate regression further demonstrated that anxiety, a sense of belonging to the local or global Muslim community, and sympathy for violence were strong predictors of terrorism sympathy. However, the total model was not significant, demonstrating that these four factors cannot be considered together in an additive model.

Public health research into terrorism has been dominated by the case-control study method, therefore the application here of a cross-sectional study provides considerable theoretic and practical advancements. While case-control studies are highly subject to recall, information and selection bias this study is able to offer a current perspective into the risk factors for a representative, random sample of UK Muslims.

Future studies should utilise a fully representative sample of the British population to improve the generalisability of their findings, such as in Bhui et al. (2019). As would the application of a methodology similar to that of Webber et al. (2018) to test the validity of findings in samples of both convicted extremists, and the general population. A qualitative component to any future study of the construct would also be prudent to further understand the relationships, or lack thereof, between risk for radicalisation, mental health, sense of community belonging, and perceived discrimination.

Additionally, as sympathy for violence appears to be a risk factor to radicalisation, a study assessing the rates of terrorism sympathy within a sample of violent offenders in the UK prison population would be prudent. It has been observed that many Islamic extremists converted to Islam while in prison, as such, a longitudinal study of this population may yield especially valuable information. Likewise, the reoccurring finding that higher education may be a risk factor should be further investigated, to determine what factors, if any, within the education system are predisposing individuals to radicalisation.

Ongoing research in this space should pay specific regard to regulating the definition and construct of terrorism or radicalisation the study focuses on. The differences in findings and the findings of K. Bhui, Warfa, et al. (2014) within the same population, but with the inclusion of defensive violence items in the radicalisation measure, highlight how the differing results between studies may be partly driven by the lack of specificity and consistency regarding the construct under study (Desmarais et al., 2017).

Finally, government policy and media reports surrounding radicalisation and terrorism should be mindful of our findings that participation in Islamic practices do not relate to terrorism sympathy. All future counter-terrorism strategy should be mindful not to ostracise the Muslim community, and should instead focus on partnerships with community leaders to ensure all preventative interventions are effective, appropriate, and offer substantial benefit to the British population as a whole.

References

- Alderdice, T. L. (2007). The individual, the group and the psychology of terrorism. *International Review of Psychiatry*, 2007, Vol.19(3), p.201-209, 19(3), 201-209. doi:10.1080/09540260701346825
- Benmelech, E., & Berrebi, C. (2007). Human Capital and the Productivity of Suicide Bombers. *Journal of Economic Perspectives*, 21(3), 223-238. doi:10.1257/jep.21.3.223
- Bhui, K., Everitt, B., & Jones, E. (2014). Might depression, psychosocial adversity, and limited social assets explain vulnerability to and resistance against violent radicalisation? *PLoS One*, 9(9), e105918. doi:10.1371/journal.pone.0105918
- Bhui, K., James, A., & Wessely, S. (2016). Mental illness and terrorism. *BMJ*, 354, i4869. doi:10.1136/bmj.i4869
- Bhui, K., Otis, M., Silva, M. J., Halvorsrud, K., Freestone, M., & Jones, E. (2019). Extremism and common mental illness: cross-sectional community survey of White British and Pakistani men and women living in England. *The British Journal of Psychiatry*, 1-8. doi:10.1192/bjp.2019.14
- Bhui, K., Silva, M., Topciu, R., & Jones, E. (2016). Pathways to sympathies for violent protest and terrorism. *Br J Psychiatry*, 209(6), 483-490. doi:10.1192/bjp.bp.116.185173
- Bhui, K., Stansfeld, S., McKenzie, K., Karlsen, S., Nazroo, J., & Weich, S. (2005). Racial/Ethnic Discrimination and Common Mental Disorders Among Workers: Findings From the EMPIRIC Study of Ethnic Minority Groups in the United Kingdom. *American Journal of Public Health*, 95(3), 496-501. doi:10.2105/ajph.2003.033274
- Bhui, K., Warfa, N., & Jones, E. (2014). Is violent radicalisation associated with poverty, migration, poor self-reported health and common mental disorders? *PLoS One*, 9(3), e90718. doi:10.1371/journal.pone.0090718
- Corner, E., & Gill, P. (2015). A False Dichotomy? Mental Illness and Lone-Actor Terrorism. *Law and Human Behavior*, 39(1), 23-34. doi:10.1037/lhb0000102
- Counter Extremism Project. (2017). *Extremist Converts*. Retrieved from
- Crone, M., & Harrow, M. (2010). *Homegrown terrorism in the West, 1989-2008*. Retrieved from Copenhagen:
- Desmarais, S. L., Simons-Rudolph, J., Brugh, C. S., Schilling, E., & Hoggan, C. (2017). The State of Scientific Knowledge Regarding Factors Associated With Terrorism. *Journal of Threat Assessment and Management*, 4(4), 180-209. doi:10.1037/tam0000090
- Fair, C. C., Goldstein, J. S., & Hamza, A. (2017). Can Knowledge of Islam Explain Lack of Support for Terrorism? Evidence from Pakistan. *Studies in Conflict & Terrorism*, 40(4), 339-355. doi:10.1080/1057610X.2016.1197692
- Fair, C. C., & Shepherd, B. (2006). Who Supports Terrorism? Evidence from Fourteen Muslim Countries. *Studies in Conflict & Terrorism*, 29(1), 51-74. doi:10.1080/10576100500351318
- Gill, P., Horgan, J., & Deckert, P. (2014). Bombing Alone: Tracing the Motivations and Antecedent Behaviors of Lone-Actor Terrorists. *Journal of Forensic Sciences*, 59(2), 425-435. doi:10.1111/1556-4029.12312

- Hickman, M., Thomas, L., Silvestri, S., & Nickels, H. (2011). "Suspect Communities?" Counter-terrorism policy the press, and the impact on Irish and Muslim communities in Britain. *London Metropolitan University*.
- Hotopf, M., Hull, L., Fear, N. T., Browne, T., Horn, O., Iversen, A., . . . Wessely, S. (2006). The health of UK military personnel who deployed to the 2003 Iraq war: a cohort study. *The Lancet*, 367(9524), 1731-1741. doi:10.1016/S0140-6736(06)68662-5
- Koomen, W., & Van Der Pligt, J. (2015). *The psychology of radicalisation and terrorism*. New York: Routledge.
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med*, 16(9), 606-613.
- Krueger, A. B. (2008). What makes a homegrown terrorist? Human capital and participation in domestic Islamic terrorist groups in the U.S.A. *Economics Letters*, 101(3), 293-296. doi:10.1016/j.econlet.2008.09.008
- LaFree, G., & Ackerman, G. (2009). The Empirical Study of Terrorism: Social and Legal Research. *Annual Review of Law and Social Science*, 5, 347-374. doi:10.1146/annurev.lawsocsci.093008.131517
- McCauley, C., Moskalenko, S., & Son, B. V. (2013). Characteristics of Lone-Wolf Violent Offenders: a Comparison of Assassins and School Attackers. *Perspectives on Terrorism*, 7(1).
- McGilloway, A., Ghosh, P., & Bhui, K. (2015). A systematic review of pathways to and processes associated with radicalization and extremism amongst Muslims in Western societies. *International Review of Psychiatry*, 2015, Vol.27(1), p.39-50, 27(1), 39-50. doi:10.3109/09540261.2014.992008
- Mills, S. D., Fox, R. S., Malcarne, V. L., Roesch, S. C., Champagne, B. R., & Sadler, G. R. (2014). The Psychometric Properties of the Generalized Anxiety Disorder-7 scale in Hispanic Americans with English or Spanish Language Preference. *Cultural diversity & ethnic minority psychology*, 20(3), 463-468. doi:10.1037/a0036523
- Neumann, P. R. (2016). *Radicalised: New Jihadists and the threat to the West*. London: L.B. Tauris & Co. .
- Paradies, Y. (2006). A systematic review of empirical research on self-reported racism and health. *Int J Epidemiol*, 35(4), 888-901. doi:10.1093/ije/dyl056
- Post, J. M. (2015). Terrorism and Right-Wing Extremism: The Changing Face of Terrorism and Political Violence in the 21st Century: The Virtual Community of Hatred. *International Journal of Group Psychotherapy*, 65(2), 243-271. doi:10.1111/j.1749-6632.2010.05694.x
- Putra, I. E., & Sukabdi, Z. A. (2014). Can Islamic Fundamentalism Relate to Nonviolent Support? The Role of Certain Conditions in Moderating the Effect of Islamic Fundamentalism on Supporting Acts of Terrorism. *Peace and Conflict: Journal of Peace Psychology*, 20(4), 583-589. doi:10.1037/pac0000060
- Rogers, M. B., Loewenthal, K. M., Lewis, C. A., Amlot, R., Cinnirella, M., & Ansari, H. (2007). The role of religious fundamentalism in terrorist violence: a social psychological analysis. *Int Rev Psychiatry*, 19(3), 253-262. doi:10.1080/09540260701349399
- Schbley, A. (2003). Defining Religious Terrorism: A Causal and Anthological Profile. *Studies in Conflict & Terrorism*, 26(2), 105-134. doi:10.1080/10576100390145198
- Silber, M. (2008). *Islamic Radicalization in the West: The Homegrown Threat*. Retrieved from
- Stares, P., & Yacoubian, M. (2007). *Terrorism as a disease: an epidemiological model for countering Islamic Extremism*. Retrieved from

- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (Vol. 5th). Boston: Pearson/Allyn & Bacon.
- Victoroff, J., Adelman, J. R., & Matthews, M. (2012). Psychological Factors Associated with Support for Suicide Bombing in the Muslim Diaspora. *Political Psychology*, 33(6), 791-809. doi:10.1111/j.1467-9221.2012.00913.x
- Victoroff, J., Quota, S., Adelman, J. R., Celinska, B., Stern, N., Wilcox, R., & Sapolsky, R. M. (2010). Support for religio-political aggression among teenaged boys in Gaza: Part I: psychological findings. *Aggressive Behavior*, 36(4), 219-231. doi:10.1002/ab.20348
- Webber, D., Babush, M., Schori-Eyal, N., Vazeou-Nieuwenhuis, A., Hettiarachchi, M., Bélanger, J. J., . . . Gelfand, M. J. (2018). The Road to Extremism: Field and Experimental Evidence That Significance Loss-Induced Need for Closure Fosters Radicalization. *Journal of Personality and Social Psychology*, 114(2), 270-285. doi:10.1037/pspi0000111
- Zhirkov, K., Verkuyten, M., & Weesie, J. (2014). Perceptions of world politics and support for terrorism among Muslims: Evidence from Muslim countries and Western Europe. *Conflict Management and Peace Science*, 31(5), 481-501. doi:10.1177/0738894213510121
- Zimmermann, E. (2011). Globalization and terrorism. *European Journal of Political Economy*, 27, S152-S161. doi:10.1016/j.ejpoleco.2011.09.003

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